

Reducing Maternal Mortality in India: Progress, Persistent Inequities, and Health System Challenges in Achieving SDG Targets

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Abstract: *Maternal mortality remains a major public health concern despite significant global and national efforts to improve maternal health outcomes. India has demonstrated considerable progress in reducing the Maternal Mortality Ratio (MMR) over the past two decades through large-scale health system strengthening initiatives, promotion of institutional delivery, and maternal health programs. According to the Sample Registration System (SRS) 2018–20, India's MMR declined to 97 per 100,000 live births, reflecting substantial improvement compared to earlier decades. However, wide interstate disparities, inequities in healthcare access, quality-of-care gaps, shortages of skilled human resources, delayed referrals, and socioeconomic vulnerabilities continue to contribute to preventable maternal deaths. This review article examines the trends, determinants, policy interventions, and persistent challenges associated with maternal mortality in India. The paper critically reviews government initiatives such as Janani Suraksha Yojana, Janani Shishu Suraksha Karyakram, LaQshya, and comprehensive primary healthcare reforms. The review also highlights the importance of respectful maternity care, emergency obstetric services, health system preparedness, and equitable access to quality maternal healthcare for achieving Sustainable Development Goal (SDG) targets by 2030. The article concludes with strategic recommendations for strengthening maternal healthcare systems and reducing preventable maternal mortality in India.*

Keywords: Maternal Mortality; India; Maternal Health; Quality of Care; SDG 3; Health Systems

1. Introduction

Maternal mortality is widely recognized as a sensitive indicator of the effectiveness, accessibility, and equity of a healthcare system. The World Health Organization defines maternal mortality as the death of a woman during pregnancy, childbirth, or within 42 days of termination of pregnancy from causes related to or aggravated by pregnancy or its management. Globally, approximately 287,000 maternal deaths occurred in 2020, with low- and middle-income countries contributing disproportionately to this burden. India, due to its large population and significant socioeconomic diversity, has historically contributed substantially to global maternal deaths. However, over the last two decades, India has made notable progress in reducing maternal mortality through policy reforms, increased institutional deliveries, expanded maternal health services, and strengthened reproductive healthcare programs.

The Maternal Mortality Ratio (MMR) in India declined from 384 per 100,000 live births in 2000 to 97 per 100,000 live births during 2018–20, reflecting substantial improvement in maternal healthcare coverage and utilization. Despite this progress, several states continue to report disproportionately high maternal mortality due to inadequate healthcare infrastructure, delayed obstetric care, poor referral systems, anemia, malnutrition, poverty, and inequitable access to skilled healthcare services. States such as Assam, Madhya Pradesh, Uttar Pradesh, and Chhattisgarh continue to report higher maternal mortality compared to southern states like Kerala and Tamil Nadu.

Maternal mortality reduction is central to Sustainable Development Goal 3 (SDG 3), which aims to reduce global maternal mortality to less than 70 per 100,000 live births by 2030. India's progress toward this target requires a multidimensional approach integrating healthcare quality, emergency obstetric care, nutrition, gender equity, financial protection, and community participation. This review article examines the trajectory of maternal mortality reduction in India, evaluates the role of major maternal health initiatives, identifies persisting barriers, and proposes strategic recommendations for accelerating progress toward SDG targets.

2. Literature Survey

Existing literature demonstrates that maternal mortality in India is strongly associated with healthcare accessibility, socioeconomic status, quality of care, and regional disparities. Studies indicate that the leading direct causes of maternal deaths in India include postpartum hemorrhage, hypertensive disorders, sepsis, unsafe abortion, and obstructed labor. Indirect causes such as anemia, malnutrition, infectious diseases, and delayed treatment-seeking further increase maternal risk.

Research has consistently shown that institutional deliveries significantly reduce maternal mortality when supported by skilled birth attendance and emergency obstetric care. The Janani Suraksha Yojana (JSY), launched under the National Rural Health Mission, substantially increased institutional delivery rates through conditional cash transfers. Several evaluations have reported positive impacts of JSY on service

utilization; however, improvements in quality of care have remained inconsistent.

Studies on the Janani Shishu Suraksha Karyakram (JSSK) suggest that removal of out-of-pocket expenditure barriers improved maternal healthcare access among economically vulnerable populations. Literature also highlights the contribution of programs such as LaQshya in improving labor room quality and respectful maternity care in public facilities.

Evidence further indicates that maternal mortality is disproportionately higher among women from tribal communities, rural areas, low-income households, and marginalized social groups. Poor transportation, delayed referrals, inadequate blood storage facilities, and shortages of skilled specialists remain critical bottlenecks in rural and remote regions.

Recent literature increasingly emphasizes the role of quality of care rather than mere service coverage. While institutional delivery rates have increased substantially in India, several studies argue that preventable maternal deaths continue to occur due to inadequate intrapartum monitoring, poor infection prevention practices, delayed cesarean interventions, and weak accountability mechanisms.

3. Problem Definition

Despite significant reductions in MMR, India continues to experience preventable maternal deaths due to persistent systemic, socioeconomic, and geographic inequalities. Increased institutional delivery coverage alone has not ensured uniformly high-quality maternal healthcare. Significant interstate variation in maternal outcomes reflects unequal healthcare infrastructure, workforce distribution, and emergency obstetric preparedness.

Key problems contributing to maternal mortality in India include:

- Delayed identification and management of obstetric emergencies
- Weak referral and transportation systems
- Shortage of skilled healthcare professionals in rural areas
- Poor quality intrapartum and postnatal care
- High prevalence of anemia among pregnant women
- Financial and social barriers affecting healthcare access
- Limited intensive care and blood bank facilities in underserved regions
- Inadequate focus on respectful maternity care and patient-centered services

Addressing these challenges requires an integrated health system strengthening beyond increasing service utilization.

4. Methodology / Approach

This article adopts a narrative review methodology based on secondary data analysis and synthesis of published literature, national reports, policy documents, and peer-reviewed research studies related to maternal mortality in India. Relevant literature was identified through databases including PubMed, Google Scholar, WHO publications, Government of India reports, National Family Health Survey (NFHS), and Sample Registration System (SRS) reports.

The review focused on:

- Maternal mortality trends in India
- Determinants and causes of maternal deaths
- Government maternal health programs
- Health system barriers
- Quality of maternal healthcare services
- Policy implications and recommendations

The article synthesizes evidence from national and international literature to provide a comprehensive understanding of maternal mortality reduction efforts and challenges in India.

5. Results and Discussion

Trends in Maternal Mortality Reduction

India has demonstrated remarkable progress in reducing maternal mortality over the past two decades. The decline in MMR reflects improved institutional delivery rates, expansion of skilled birth attendance, enhanced antenatal care coverage, and improved reproductive health services. Southern states such as Kerala and Tamil Nadu have achieved near-SDG-level maternal health indicators due to stronger public health systems, better female literacy, and efficient referral networks.

However, high-burden states continue to contribute disproportionately to maternal deaths. Socioeconomic inequality, geographic inaccessibility, and weak healthcare infrastructure remain major determinants of adverse maternal outcomes.

Role of Government Initiatives

Government initiatives have played a critical role in reducing maternal mortality in India. Some major initiatives and key focus areas are:

Janani Suraksha Yojana (JSY) significantly increased institutional deliveries through financial incentives to pregnant women. The scheme improved healthcare utilization, particularly among economically vulnerable populations. Janani Shishu Suraksha Karyakram (JSSK) reduced financial barriers by providing free maternal healthcare services, including diagnostics, medicines, transportation, and diet support. LaQshya focused on improving the quality of labor room and maternity operation theatre services. The initiative emphasized respectful maternity care, infection prevention, and quality improvement processes. Comprehensive Primary Healthcare under Ayushman Bharat strengthened antenatal care, community-level screening, referral systems, and continuum-of-care approaches. The role of Accredited Health Activists (ASHAs) also remains significant for connecting the community to the health system. For India's MMR decline, ASHA is widely recognized as a structural determinant as she plays a vital role in counselling pregnant women, as well as the women in the postpartum phase.

1) Persistent Challenges

Despite policy efforts, multiple challenges continue to hinder maternal mortality reduction.

2) Quality of Care Gaps

Several maternal deaths occur despite institutional delivery due to poor quality care, delayed clinical decision-making, inadequate monitoring, and lack of emergency obstetric preparedness.

3) Human Resource Shortages

Shortages of obstetricians, anesthetists, nurses, and skilled birth attendants continue to affect rural healthcare delivery.

4) Referral Delays

Delayed referrals remain a major contributor to maternal mortality, particularly in geographically remote areas where transportation infrastructure is weak.

5) Social Determinants

Poverty, malnutrition, gender inequality, low female education, early marriage, and poor nutrition continue to increase maternal vulnerability.

6) High Anemia Burden

India continues to report a high prevalence of anemia among pregnant women, significantly increasing maternal morbidity and mortality risks.

7) Need for Respectful Maternity Care

Emerging evidence emphasizes that respectful maternity care is essential for improving maternal health outcomes. Disrespect, abuse, discrimination, and poor patient-provider communication reduce trust in public health systems and negatively affect healthcare-seeking behavior.

6. Conclusion

India has made substantial progress in reducing maternal mortality and strengthening maternal healthcare systems. Large-scale maternal health initiatives have contributed significantly to increased institutional deliveries and improved service utilization. However, persistent inequities, quality-of-care deficiencies, workforce shortages, and weak emergency referral systems continue to result in preventable maternal deaths.

Achieving SDG targets requires a shift from coverage-focused approaches toward quality-centered, equitable, and patient-centered maternal healthcare systems. Strengthening emergency obstetric care, respectful maternity services, healthcare workforce capacity, and referral mechanisms will be critical for sustaining progress and eliminating preventable maternal deaths in India.

7. Future Scope

Future maternal health strategies in India should prioritize:

- Strengthening quality improvement initiatives in maternity care
- Expanding emergency obstetric and intensive care services
- Integrating digital health and telemedicine in maternal care
- Addressing anemia and nutritional vulnerabilities
- Improving maternal death surveillance and response systems

- Enhancing rural referral transportation systems
- Promoting respectful and equitable maternity care
- Strengthening community participation and health literacy

Further research is needed to evaluate the long-term impact of quality-of-care interventions, digital maternal health platforms, and climate-related maternal health vulnerabilities in India.

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